REMARKS

Reconsideration of this application, as amended, is respectfully requested.

THE SPECIFICATION

The specification has been amended to better accord with the drawings, and to place the abstract in better U.S. form, as required by the Examiner.

No new matter has been added, and it is respectfully requested that the amendments to the specification be approved and entered, and that the Examiner's objection to the specification be withdrawn.

THE DRAWINGS

Figs. 6B, 7B and 8B have been amended to change reference numeral 39 to 38 in accordance with the disclosure in the specification at page 18, line 5, page 19, line 20, and page 20, line 16.

Submitted herewith are replacement sheets for Figs. 6B, 7B and 8B which incorporate the amendments, and annotated sheets showing the changes made thereto.

No new matter has been added, and it is respectfully requested that the amendments to the drawings be approved and

entered, and that the Examiner's objection to the drawings be withdrawn.

THE CLAIMS

Claim 1 has been amended to more positively recite the reproducing environment apparatus, and also to recite the features of the present invention whereby the photographing environment information comprises photographing illumination spectrum information and photographing object feel-of-material information, and whereby the observing environment information comprises observing illumination spectrum information and observing object feel-of-material information, and wherein the reproducing environment converting unit converts the image of the object with reference to the photographing illumination spectrum information, the photographing object feel-of-material information, the observing illumination spectrum information and the observing object feel-of-material information, as supported by the disclosure in the specification at page 1, lines 9-10, at page 5, lines 4-5, and page 10, line 8 to page 11, line 4.

Claims 2, 3, 9-11, 14 and 16 have been amended to reflect the amendments to claim 1 and the cancellation of claims 4 and 5, and/or to make some minor grammatical improvements and/or to correct some minor antecedent basis problems so as to place the claims in better form for issuance in a U.S. patent. In this

connection, it is noted that the informalities pointed out by the Examiner have all been corrected, and it is respectfully submitted that all of the original and amended claims are in full compliance with the requirements of 35 USC 112, second paragraph.

In addition, new claim 28 has been added, depending from claim 1, to recite the feature of the present invention formerly recited in claim 2 whereby the reproducing environment converting unit comprises a color converting unit for converting the image based on a difference between an illuminating light spectrum of a photographing place and an illuminating light spectrum of an observing place.

New claim 29 has been added, depending from claim 1, to recite the feature of the present invention described at page 5, lines 2-5 of the specification, whereby the photographing object feel-of-material information includes information on illumination in photographing.

New claim 30 has been added, depending from claim 29, to recite the feature of the present invention described on page 9, line 25 to page 10, line 14 of the specification, whereby the information on illumination in photographing includes information on at least one of a position, a radiating angle and a form of illuminating light of a photographing place.

New claim 31 has been added to recite the subject matter previously recited in claim 13, depending from claim 30.

New claim 32 has been added, depending from claim 1, to recite the feature of the present invention described at page 5, lines 2-5 of the specification, whereby the information on observing illumination comprises information on at least one of a position, a radiating angle and a form of illuminating light of an observing place.

New claim 33 has been added, depending from claim 32, to recite the feature of the present invention described in the specification at page 11, lines 2-4, whereby the information on observing illumination comprises information on at least one of a position, a radiating angle and a form of illuminating light of an observing place.

New claim 34 has been added to recite the subject matter of claim 2 whereby the reproducing environment converting unit converts the image with reference to either the photographing environment information further including at least object three-dimensional information, or the observing environment information further including at least object direction information, depending from claim 1.

New claim 35 has been added to recite the subject matter previously recited in claim 7, depending from claim 34.

New claim 36 has been added to recite the feature of the present invention recited in claim 9, depending from claim 35.

New claim 37 has been added to recite the subject matter of claim 3 whereby the reproducing environment converting unit converts the image with reference to either the photographing environment information further including at least object three-dimensional form information, or the observing environment information further including at least observer position information, depending from claim 1.

New claim 38 has been added to recite the subject matter previously recited in claim 8, depending from claim 37.

And new claim 39 has been added to recite the subject matter of claim 9, depending from claim 37.

No new matter has been added, and it is respectfully requested that the amendments to claims 1-3, 9-11, 14 and 16 and the addition of new claims 28-39 be approved and entered.

THE DOUBLE PATENTING REJECTIONS

Claim 1 was rejected under the judicially created doctrine of double patenting over claims 1, 2, 16, 19 and 20 of USP 6,466,334 ("Komiya et al"), and claim 2 was rejected under the judicially created doctrine of double patenting over claims 8 and 24 of Komiya et al. These rejections, however, are respectfully traversed with respect to claims 1 and 2 as amended hereinabove.

According to the present invention as recited in amended claim 1, an image processing apparatus is provided for processing

an image of an object taken by an image input apparatus, for subsequent display or printing of the processed image by an image output apparatus. As recited in amended claim 1, the image processing unit of the present invention comprises:

a reproducing environment converting unit which converts the image of the object in accordance with an environment in which the image of the object is to be observed, with reference to (i) photographing environment information acquired at a time of photographing the object by the image input apparatus and (ii) observing environment information acquired at a time of observing the image of the object via the image output apparatus;

wherein the photographing environment information comprises photographing illumination spectrum information and photographing object feel-of-material information;

wherein the observing environment information comprises observing illumination spectrum information and observing object feel-of-material information; and

wherein the reproducing environment converting unit converts the image of the object with reference to at least each of the photographing illumination spectrum information, the photographing object feel-of-material information, the observing illumination spectrum information and the observing object feel-of-material information.

With this structure, the image processing apparatus of the present invention as recited in amended claim 1 advantageously allows an image to be reproduced in accordance with illuminating light spectrum information and information on feel of material of the object, so that the image can be realistically reproduced as if the object were present in the observing place.

As recognized by the Examiner, Komiya et al discloses an image processing apparatus for processing an image of an object taken by an image input apparatus, wherein the image processing apparatus includes a reproducing environment converting unit for processing the image prior to output of the image by an image output apparatus. The reproducing environment converting unit of Komiya converts the input image to an output image with reference to information on a desired reproducing environment which is determined based on photographing environment information in photographing of the image and observing environment information determined when the image is output. And a color converting unit converts data of the image of an object taken by an image input apparatus with reference to at least one of information on an image input apparatus and photographing illumination spectrum information used in photographing of the object by the image input apparatus.

It is respectfully submitted, however, that Komiya et al does not claim the features of the present invention as recited in amended claim 1 whereby the photographing environment information comprises photographing illumination spectrum information and photographing object feel-of-material information, whereby the observing environment information comprises observing illumination spectrum information and observing object feel-of-material information, and wherein the reproducing environment converting unit converts the image of the object with reference to the photographing illumination spectrum information, the photographing object feel-of-material information, the observing illumination spectrum information and the observing object feel-of-material information.

In fact, it is respectfully submitted that Komiya et al does not at all disclose, teach or suggest these features of the claimed present invention. And as a result, Komiya et al cannot achieve the advantageous effect of the claimed present invention whereby an image can be reproduced in accordance with illuminating light spectrum information and information on feel of material of the object, so that the image can be realistically reproduced as if the object were present in the observing place.

Accordingly, it is respectfully requested that the double patenting rejections be withdrawn.

THE PRIOR ART REJECTION

Claims 1-27 were all rejected either under 35 USC 102 as being anticipated by JP 09-172649 ("Ooyama et al"), or as being obvious in view of the combination of Ooyama with one of USP 6,014,472 ("Minami et al"), USP 6,256,035 ("Katayama et al"), USP 3,564,988 ("Jones"), USP 4,794,262 ("Sato et al"), and USP 6,215,461 ("Ishibashi et al"). These rejections, however, are respectfully traversed with respect to the claims as amended hereinabove.

As recognized by the Examiner, Ooyama et al discloses an image taking apparatus whereby spectral picture photographing means photograph a subject image as spectral information. Photographing light spectral detecting means detects the spectral distribution of illumination light. And the image is reproduced based on spectral illumination data at the site of reproduction. Thus, Ooyama et al discloses capturing an image of an object and reproducing the captured image by photographing environment information and illumination light data captured as observing environment information.

It is respectfully submitted, however, that Ooyama et al does not disclose, teach or suggest the feature of the claimed present invention as recited in claim 1 whereby the reproducing environment converting unit converts the image of the object with reference to the photographing illumination spectrum information,

the photographing object feel-of-material information, the observing illumination spectrum information and the observing object feel-of-material information.

In addition, it is also respectfully submitted that each of Minami et al, Katayama et al, Jones, Sato et al, and Ishibashi et al also fails to disclose, teach or suggest the feature of the present invention as recited in amended claim 1 whereby the reproducing environment converting unit converts the image of the object with reference to the photographing illumination spectrum information, the photographing object feel-of-material information, the observing illumination spectrum information and the observing object feel-of-material information.

Accordingly, it is respectfully submitted that even if the Ooyama et al were combinable with any of Minami et al, Katayama et al, Jones, Sato et al, and Ishibashi et al, the structural features and advantageous effects of the present invention would still not be achieved or rendered obvious. In particular, it is respectfully submitted that even if the cited references were combinable in the manner suggested by the Examiner, such combination would still not reproduce an image in accordance with illuminating light spectrum information and information on feel of material of the object, so that the image can be realistically reproduced as if the object were present in the observing place, as achieved by the claimed present invention.

In view of the foregoing, it is respectfully submitted that amended independent claim 1 and each of claims 2, 3, 6, 9-12, 14-16 and 28-39 depending therefrom all patentably distinguish over Ooyama et al, Minami et al, Katayama et al, Jones, Sato et al, and Ishibashi et al, taken singly or in any combination, under 35 USC 102 as well as under 35 USC 103.

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Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,

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